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A NEW BRAZILIAN MOTH OF THE GENUS GONIOTERMA WITH NOTES ON RELATED SPECIES (LEPIDOPTERA: STENOMIDAE)

By W. Donald Duckworth

This description is published to provide a name for a new species of Microlepidoptera for which Dr. Lauro P. Travassos F. of São Paulo, Brazil, has ecological data to be published.

During the course of the present study I found that the new species is related very closely to several that have been associated improperly with the genus *Stenoma* Zeller. These species have been studied, features critical to their recognition have been discussed and figured, and the species have been placed in their proper position in the genus *Gonioterma* Walsingham.

When fresh, the species examined are rather distinct in coloration, but because they fade rapidly, specific recognition on the basis of color alone is difficult. For this reason the genitalia are described and

specific differences are noted from this character. A complete revision of the genus *Gonioterma* is planned, but the present study at least will permit recognition of the included species.

Because, in some instances, characters used to distinguish the females involve differences in size, the illustrations of the female genitalia were all drawn to the same magnification. Mr. Andre Pizzini made the illustrations for this paper.

Gonioterma exquisita, new species

FIGURES 1*a,b*; 2*a,e*

Alar expanse 21–23 mm.

Antenna whitish sprinkled with brown basally, whitish annulated with brown beyond. Head white medially with transverse band of gray between bases of antennae; second segment of palpus white, shaded with brown on outer side, white on inner side. Legs whitish ocherous; forelegs heavily shaded with fuscous, mid- and hindlegs lightly shaded with brown. Tegula and dorsoanterior portion of thorax white, shaded with gray, posterior portion of thorax gray. Abdomen ocherous. Forewing white; base of costa narrowly fuscous; three triangular fuscous costal spots, one at basal third, one near middle, one at apical fourth; from outer corner of apical spot a row of fuscous dots extends from apex along termen to tornus; black spot at base of cell from which a wide band of olivaceous brown extends to inner angle; from apex of middle costal spot an irregular patch of gray extends transversely around basal spot to inner margin; crescent-shaped olivaceous brown spot at end of cell; irregular patch of gray, shaded with olivaceous brown, extends from tornus to apex of apical costal spot; cilia fuscous basally, white beyond. Hindwing light gray with whitish costal margin in males, heavily shaded with fuscous in females; cilia white with gray subbasal line.

Male genitalia: See figures 1*a,b* (slide WDD 2502, paratype). Uncus reduced, curved ventrad; gnathos complete, basal process well developed, rather long, recurved; division of gnathal arms at base of process; tegumen moderately constricted; harpe broad, saccular lobe rather narrow, bluntly pointed; anellar lobes broad, bluntly rounded at apex; aedeagus short, broad, vesica armed with two elongate, convoluted clusters of small, heavy cornuti.

Female genitalia: See figure 2*a* (slide WDD 2503, paratype). Genital plate membranous; ostium small, ostium bursae enlarged; ductus bursae short, less than half length of corpus bursae, which has two dentate signa; anterior margin of eighth abdominal tergum with rectangular indentation.

Type: Brazil, Lassance, Minas Geraes, Nov. 9–12, 1919, USNM 66418.

Described from male holotype, one male paratype, three female paratypes. All paratypes with following data: Brazil, São Paulo, S.P., Ypiranga (April 4, 1960, W. Bokemann). One female paratype is in the Departamento de Zoologia, Secretaria da Agricultura, São Paulo, Brazil.

This species and the others included in this study—*chlorina, aesiocopia, algosa, fastigata, argicerauna, bryophanes*—form a very closely related group within the genus *Gonioterma*. The males of *G. exquisita* are readily separable from the males of the previously mentioned species by the absence, along vein 1a in the hindwing, of a hair pencil that is present in the other species. Also, the forewing of *G. exquisita* has a straight costa and white ground color, whereas the other species mentioned above possess a strongly arched costa in the forewing and lack a white ground color.

The genitalia, although indicating an unusually close relationship between *G. exquisita* and the other species included in this study, provide a number of distinguishing characters. The complete gnathos and the broad harpe, with narrow, bluntly pointed saccular lobe, serve to distinguish the males of *G. exquisita*. The short ductus bursae in the female genitalia serves to separate the females.

***Gonioterma chlorina* (Kearfott), new combination**

FIGURES 1*c,d*; 2*b*

Stenoma chlorina Kearfott, 1911, Ent. News, vol. 22, p. 126.

Type locality: São Paulo, Brazil.

Male genitalia: See figures 1*c,d* (slide WDD 2052, São Paulo, Brazil, type). Uncus reduced, curved sharply ventrad; gnathos incomplete, basal process well developed, long, recurved, pointed; division of gnathal arms well below process; tegumen narrowly constricted; harpe narrow, saccular lobe broad, blunt; anellar lobes broad, bluntly rounded at apex; aedeagus narrow, vesica armed with one elongate convoluted cluster of small, heavy cornuti.

Female genitalia: See figure 2*b* (slide WDD 2501, São Paulo, Brazil). Genital plate membranous; ostium large, ostium bursae enlarged; ductus bursae longer than in *G. exquisita*, more than half length of corpus bursae; corpus bursae with two dentate signa; anterior margin of eighth abdominal tergum as in *G. exquisita*.

This species and the following one, *G. aesiocopia*, are very similar in coloration and general appearance. However, the long, recurved, pointed basal process and the division of the gnathal arms well below the process in the male genitalia serve to separate the males of *G. chlorina* from those of *G. aesiocopia*. The females are more difficult to separate, but figures 2*b* and *c* indicate the size differences that will distinguish the species in a majority of instances.

Gonioterma aesiocopia (Walsingham), new combination

FIGURES 1*g*, 2*c*

Stenoma aesiocopia Walsingham, 1913, *in* Godman and Salvin, Biologia Centrali-Americana, vol. 42 (Lepidoptera-Heterocera, vol. 4), p. 179.
Stenoma aphrogramma Meyrick, 1929, Trans. Ent. Soc. London, vol. 76, p. 515.

Type localities: Veracruz, Mexico (*G. aesiocopia*); Taboga Isl., Panama, 200–1,000 ft. (*G. aphrogramma*).

Male genitalia: See figure 1*g* (slide WDD 2051, Rio Tempas, Honduras). Uncus reduced, curved ventrad; gnathos incomplete, basal process poorly developed, short, blunt; division of gnathal arms near apex of process; tegumen moderately constricted; harpe rather broad, saccular lobe broad, rounded at apex; anellar lobes broad, pointed at apex; aedeagus narrow, vesica armed with two elongate, convoluted clusters of small, heavy cornuti.

Female genitalia: See figure 2*c* (slide WDD 2554, Porto Bella, Panama). Genital plate membranous; ostium large, ostium bursae enlarged; ductus bursae long, wider than in *G. exquisita* or *G. chlorina;* corpus bursae with two dentate signa; anterior margin of eighth abdominal tergum as in *G. exquisita.*

The short, blunt basal process and the division of the gnathal arms near the apex of the basal process in the male genitalia distinguish the males of *G. aesiocopia.* The differences in the females have been discussed in the remarks under *G. chlorina.*

Gonioterma argicerauna (Meyrick), new combination

FIGURES 1*e*, *f*

Stenoma argicerauna Meyrick, 1925, Exotic Microlepidoptera, vol. 3, p. 221.

Type locality: Cantinero, Colombia, 1300 ft.

Male genitalia: See figures 1*e*,*f* (slide WDD 2555, Colombia). Uncus reduced, curved sharply ventrad; gnathos incomplete, basal process poorly developed, short, blunt; division of gnathal arms well below process; constriction of tegumen parallel-sided; harpe broad, saccular lobe long, tapering to very sharp, slightly recurved point; anellar lobes broad, sharply pointed at apex; aedeagus short, broad, vesica armed with one elongate, convoluted cluster of small, heavy cornuti.

Female genitalia: Unknown.

The parallel-sided constriction of the tegumen and the long narrow saccular lobe that tapers to a sharply pointed apex serve to distinguish the males from the other species.

***Gonioterma algosa* (Meyrick), new combination**

FIGURES 1*h,i*; 2*d*

Stenoma algosa Meyrick, 1916, Exotic Microlepidoptera, vol. 1, p. 537.

Type locality: Rio Maroni, French Guiana.

Male genitalia: See figures 1*h,i* (slide WDD 2549, Rio Maroni, French Guiana). Uncus reduced, curved sharply ventrad; gnathos incomplete, basal process poorly developed, short, blunt; division of gnathal arms at base of process; tegumen moderately constricted; harpe narrow, saccular lobe broad, rounded; anellar lobes narrow, vesica armed with one elongate, convoluted cluster of small, heavy cornuti.

Female genitalia: Unknown.

This species is readily identifiable by the narrow anellar lobes that taper to sharply pointed apices. Also, the lateral portions of the second and third abdominal terga have patches of large pores around which the cuticle is very heavily sclerotized (fig. 2*d*). The other species included in this study possess these patches of large pores (fig. 2*e*), but the heavy sclerotization occurs only in *G. algosa*.

***Gonioterma fastigata* (Meyrick), new combination**

FIGURE 3*a*

Stenoma fastigata Meyrick, 1915, Exotic Microlepidoptera, vol. 1, p. 430.

Type locality: Bartica, British Guiana.

Male genitalia: Unknown.

Female genitalia: See figure 3*a* (slide WDD 2551, Bartica, British Guiana). Genital plate membranous; ostium small, ostium bursae enlarged; ductus bursae moderately long; corpus bursae with two dentate signa; anterior margin of eighth abdominal tergum with two lateral hooklike lobes curving toward midline.

The two lateral hooklike lobes from the anterior margin of the eighth abdominal tergum serve to distinguish the females of *G. fastigata*.

***Gonioterma bryophanes* (Meyrick), new combination**

FIGURES 1*j*, 3*b*

Stenoma bryophanes Meyrick, 1915, Exotic Microlepidoptera, vol. 1, p. 477.

Type locality: Rio Maroni, French Guiana.

Male genitalia: See figure 1*j* (slide WDD 2838). Uncus long, curved slightly ventrad; gnathos incomplete, basal process well developed, long, truncate at apex; division of gnathal arms near base of process; tegumen moderately constricted; harpe broad, saccular lobe only slightly developed; anellar lobes broad, bluntly pointed at

apex; aedeagus short, vesica armed with two elongate, convoluted clusters of small, heavy cornuti.

Female genitalia: See figure 3*b* (slide WDD 2839). Genital plate membranous; ostium large, ostium bursae enlarged; ductus bursae moderately long; corpus bursae with two dentate signa; anterior margin of eighth abdominal tergum with heart-shaped indentation and two pointed, medially directed lobes.

The long uncus and basal process in the male genitalia and the heart-shaped indentation of the anterior margin of the eighth abdominal tergum in the female genitalia serve to distinguish *G. bryophanse* from the other species discussed.

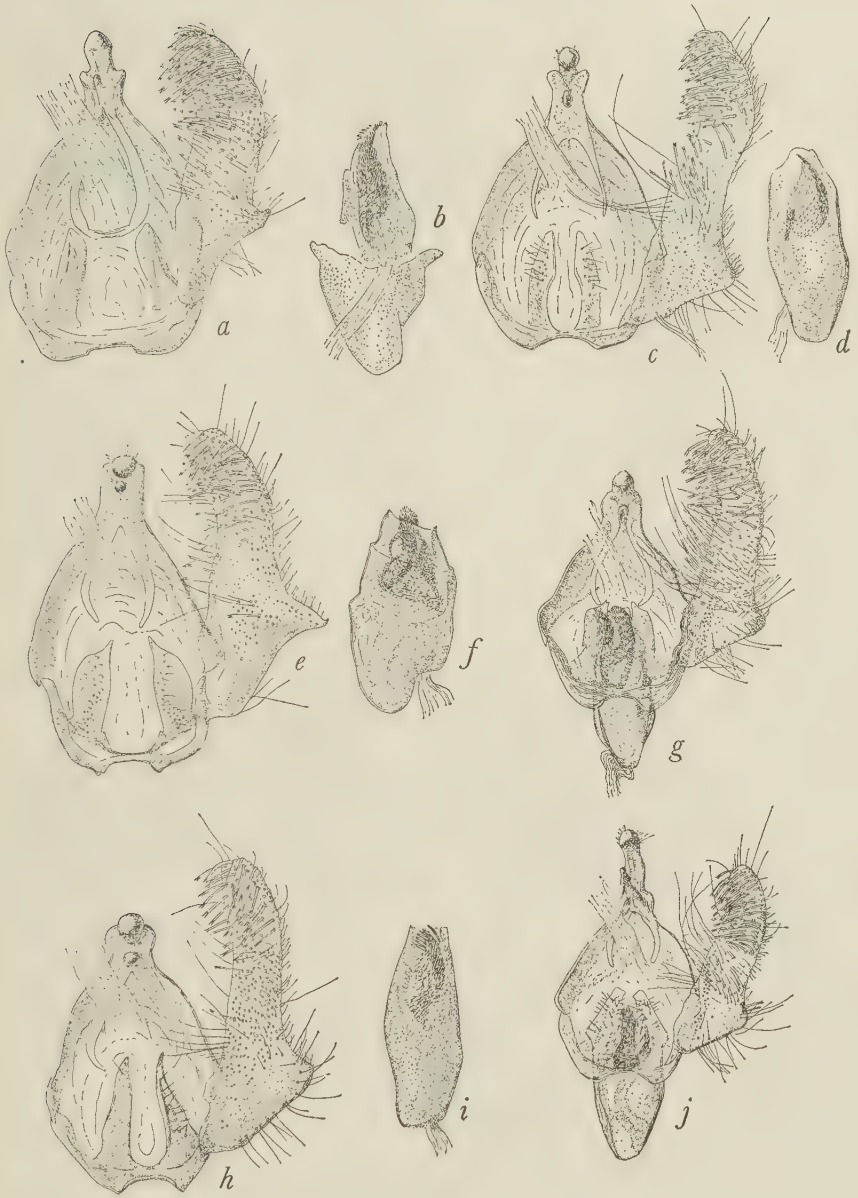

FIGURE 1.—Ventral view of male genitalia: *a*, *G. exquisita*, new species, aedeagus removed; *b*, aedeagus; *c*, *G. chlorina* (Kearfott), aedeagus removed; *d*, aedeagus; *e*, *G. argicerauna* (Meyrick), aedeagus removed; *f*, aedeagus; *g*, *G. aesiocopia* (Walsingham), aedeagus in situ; *h*, *G. algosa* (Meyrick), aedeagus removed; *i*, aedeagus; *j*, *G. bryophanes* (Meyrick), aedeagus in situ.

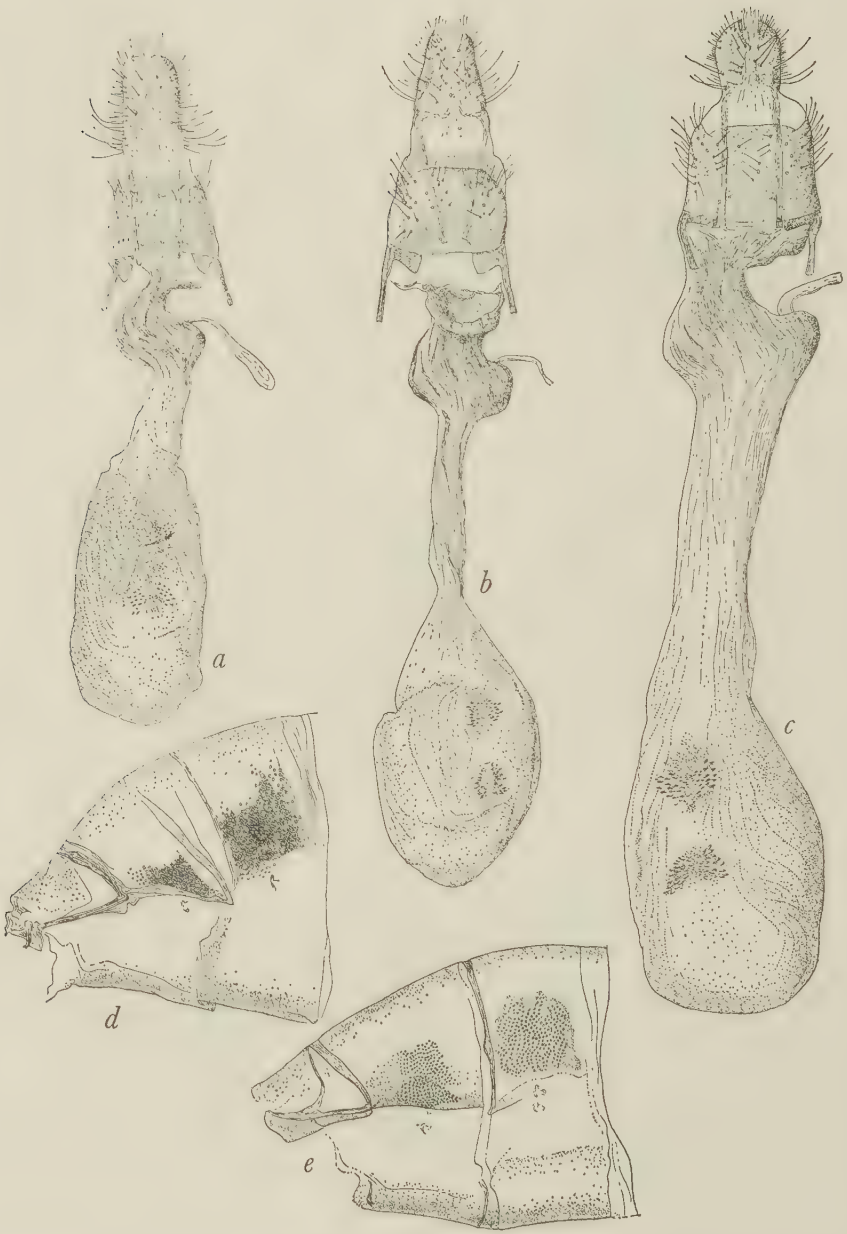

FIGURE 2.—*a*, *G. exquisita*, new species, ventral view of female genitalia; *b*, *G. chlorina* (Kearfott), ventral view of female genitalia; *c*, *G. aesiocopia* (Walsingham), ventral view of female genitalia; *d*, *G. algosa* (Meyrick), lateral view of abdominal segments 1–3; *e*, *G. exquisita*, new species, lateral view of abdominal segments 1–3.

FIGURE 3.—Ventral view of female genitalia: *a, G. fastigata* (Meyrick); *b. G. bryophanes* (Meyrick).

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